

EXHIBIT 9

Emerging Product Quality Issues Meeting May 12, 1998

Attendees:	J. S. Carter D. H. Daigle T. R. Eizember W. T. Flis H. T. Gibson W. R. Innes T. G. Kaufmann	A. M. Hochhauser B. G. Macklin R. L. Rich M. M. Shores G. T. Theriot
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Location: Room 4261
800 Bell

		Discussion Leader
12:30-1:10	MTBE Issues - Legislative/regulatory developments - Research plans/opportunities	TRE TGK
1:10-1:50	API Low Sulfur Gasoline Proposal - Rollout/reactions - Boutique fuel activities - Research on catalyst reversibility	WTF WTF AMH
1:50-2:00	Break	
2:00-2:35	California Gasoline Developments - Predictive model modifications	AMH
2:35-2:55	Jet Fuel Flash Activity -Status of producibility/cost survey	TRE
2:55-3:30	PNGV/API activities	TRE
3:30-4:00	Unocal Patent Update	TRE

MTBE Update

California

- Concerns continue over MTBE contamination of surface/groundwater, much media interest.
- 1997 legislation requires cost/benefit study, setting drinking water standards and numerous studies on health, remediation, source identification; expect reports/results in late 1998/early 1999
- 1998 legislative proposals include bills addressing ethanol use, multimedia assessment of oxygenate regulations
 - + Mountjoy (SB 1926), a bill essentially banning MTBE, died in committee
- Santa Clara Water District pushing to regulate powerboats on county reservoirs
- Oakland's East Bay Municipal District voted March 1998 to ban high emission outboard engines on San Pablo Reservoir effective 1/1/2000.
- WSPA has taken the lead in addressing California industry issues.
 - Supports legislative studies underway; opposes a ban unless studies based on sound science suggest otherwise.
 - Advocates flexibility to continue MTBE use, preventing water contamination.
 - Supports Bilbray/Feinstein Amendment to CAA for California, which would eliminate overlapping federal/state RFG procedures and federally mandated oxygen levels in summer.
 - + Bilbray/Feinstein not expected to progress for 1998.
 - WSPA task force working with CARB to permit wider range of individual product specifications while maintaining emissions performance.
- WSPA consensus position overlays some divergent views.
 - Tosco wrote to CARB (October 1997) requesting "decisive action immediately" to begin moving away from MTBE, continues to make similar public statements.
 - + Recently announced six month "pilot" use of ethanol in SF Bay area.
 - Chevron (December 1997) publicly acknowledged "legitimate environmental concern about MTBE," asked California regulators to "explore options for reducing or eliminating MTBE altogether".
 - Mobil publicly supporting WSPA position but internally concerned about MTBE.

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MTBE Update, Cont.

Other States

- Legislative and regulatory developments on MTBE
 - Connecticut and Maine -- legislative studies underway
 - Maine -- drinking water standard of 35 ppb established
 - New Jersey/New York -- considering 70 ppb waste water effluent standards
 - Indiana -- EPA guidance (20-40 ppb) basis for remediation adopted

MTBE Release Incidents

- Santa Monica: MTBE leaks in two well fields have impacted over 70% of municipal water supply, Mobil, Shell, and Chevron making initial payments of \$7M for water replacement and remediation
- North Carolina: Jury decided against Conoco in suit stemming from UST release, \$36M settlement, MTBE, other substances involved
- Philadelphia: Tank release from Mobil dealer station entered nearby private wells; local TV station aired a two-part series on MTBE; continuing litigation to resolve liability
- Kansas: In November 1997, a city well in Lacrosse was found contaminated at 600 ppb; cleanup effort went well without significant media attention

MTBE Update, Cont.

API

- Downstream Committee supports WSPA's MTBE position; currently taking low profile to avoid provoking opposition
- API has many research efforts being conducted by universities and private consortiums.
 - Natural attenuation projects - seven studies which will focus on fate & transport processes to better predict maximum plume lengths and characterizing source strength/persistence Completion 1998-2000
 - Active remediation - four studies focusing on in-situ removal of dissolved or residual MTBE and ex-situ treatment of vapor and liquid phase effluents. Completion 1998-1999
 - Other related API research on oxygenates - two studies characterizing service station stormwater runoff and aquatic toxicology of MTBE Completion 1999

Exxon

- EBSI conducted a study comparing the key human health and environmental attributes of TBA and MTBE.
 - In most respects TBA offers no significant advantages over MTBE as a gasoline oxygenate.
 - TBA possesses a much higher odor threshold than does MTBE (1000X).
 - Both MTBE and TBA are relatively resistant to biodegradation in ground water.
 - Environmental toxicity (i.e., toxicity to aquatic organisms) of TBA and MTBE is similar -- both low.
 - In general, there is much less health and environmental data available for TBA as compared to MTBE
- Exxon is participating in additional industry-sponsored research and testing to learn more about potential health and environmental effects of MTBE and other oxygenates. These efforts include:
 - Health effects testing of fuels and fuel additives under Section 211 of the Clean Air Act.
 - API-sponsored research on factors affecting movement of MTBE through soil and ground water, treatment technologies, and effects on aquatic life
- ER&E has proposed a study of MTBE contamination prevention and source identification, leading to identification of improved practices and procedures for minimizing MTBE contamination.
- Initial scoping of scenarios for eliminating MTBE from Baton Rouge and Baytown refineries completed.

BR/BT MTBE Assessment

- Gasoline blending scenarios without ethers evaluated for Baton Rouge and Baytown refineries
 - Component sales assumed uneconomic
 - Oxygen mandate scenario assumed met with downstream ethanol blending
 - Oxygenate ban scenario production restricted by loss of octane/dilution benefits of MTBE

Year 2000+ RFG Specifications, kBD					
	Base	Present Equipment	Oxygenate Ban	Additional Alky	Oxygenate Mandate
				Ethanol Blending	Ethanol w/+Alky
<u>Baton Rouge</u>					
Total Mogas	223	210	224	222	
RFG	39	37	37	39	
UP	69	64	69	68	
Cost, \$M/yr.	-	60+ ⁽¹⁾	70	60	
<u>Baytown</u>					
Total Mogas	222	200	214	208	226
RFG	80	56	80	80	80
UP	30	12	30	30	30
Cost, \$M/yr.		90+ ⁽¹⁾	90	120	75

⁽¹⁾ Economics do not include likely price increase for RFG and UP due to reduced availability

MTBE Assessment - Next Steps

- Additional assessment planned
 - Integration of no-MTBE scenarios with API low sulfur scenarios
 - Scoping of additional BR/BT alkylation capacity, BT LVN isomerization investments
- Other issues
 - Ethanol availability; downstream blending facilities requirements
 - Toluene cost/availability
 - ECA ether production impacts
 - Other oxygenate alternatives

EX 029305

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MTBE Legislative/Regulatory, Research and Incidents/Public Activity Summary

California

Legislative/Regulatory

- California legislature passed four key bills and a Governor's executive order in 1997 (AB 592, AB 1491, SB 1189, & SB521) requiring a wide range of MTBE studies: cost/benefit analysis, assessment of health, remediation, and source identification and setting of drinking water standards. Detail requirements of these bills are discussed below under Research Activity. Results of these studies are expected in late 1998 and early 1999. Governor is charged with decision-making authority based on study results.
- 1998 legislative proposals under consideration:
 - AB 1642 (Bowen) - Calls for those who produce gasoline with oxygenates to prove additional benefits as a result of using oxygenates, would disallow proposed RVP exemption for ethanol until foregoing studies conducted.
 - AB 2731 - Calls for a measurement system to determine emissions reductions effectiveness of fuels.
 - SB 2198 (Sher) - Measure intended to ensure that if CARB proposes a regulation which results in use of an oxygenate in motor vehicle fuel, that regulation undergoes a multi-media evaluation by other state environmental agencies and appropriate changes are made to their regulations to address any adverse impacts.
 - SB 1926 (Mountjoy) - A proposal to essentially ban MTBE and impose absolute liability on MTBE producers did not pass out of committee.
- State Department of Health Services in regulatory process of setting primary and secondary drinking water standards for MTBE. (Required by AB 592/SB 1189)
- State water board developing regulations to implement prohibition on product delivery to USTs that do not meet 1998 state/federal standards. (Required by AB 1491)

- State Fire Marshal (SFM) is developing Pipeline Wellhead Protection Plans to prevent, minimize and detect leaks from pipelines near public drinking water wells. (Required by AB 592/SB 1189)
- Santa Clara Water District attempting to negotiate compromise ruling which would allow powerboats on the reservoirs that supply 50% of households in the county. Refueling must be done in designated areas and would continue only as long as MTBE is below limits
- Oakland's East Bay Municipal Utility District voted (March 1998) to ban use of high emission private outboard engines on the San Pablo Reservoir effective January 1, 2000; will move to zero emissions limit by January 1, 2002
- Rep. Bilbray/Sen. Feinstein have proposed amendment to Clean Air Act for California which would eliminate overlapping federal/state RFG procedures and federally mandated oxygen levels in the summer.
 - House Commerce Subcommittee held hearing on April 22, 1998. EPA/DOE testified against the proposal. Congress not expected to act on bill this year.
- Sierra Club, American Methanol Institute, and Planning and Conservation League released a report in April 1998 criticizing the lack of coordination between the State Water Resources Control Board (SWRCB), the Regional Boards and the State Fire Marshal's (SFM) office to prevent contamination of drinking water supplies.
 - The Joint Legislative Audit Committee requested the California State Auditor to audit the regulatory programs which protect drinking water supply. This audit includes operations of SWRCB, the Regional boards, SFM, DHS, and cleanup of groundwater contamination

Research Activity

Drinking Water Source Protection

- Underground Storage Tank (UST) System Working Group evaluating adequacy of 1998 UST state and federal standards to develop recommendations to prevent, minimize and detect leaks from underground storage tanks. (Created by Governor's executive order)

Work Group staffed by state water board and includes representatives from federal, state and local agencies.

Team 1 - Assess MTBE compatibility with UST systems

Team 2 - Analyze historic data to identify system specific cause for MTBE releases

Team 3 - Analyze data recent release sites to assess cause/point of MTBE release

- Santa Clara Valley and Santa Monica Global Information System (GIS) Mapping Pilot Projects are evaluating practicality of computerized data base management and mapping of UST and pipeline locations in relation to public drinking water wells and evaluating GIS Mapping as a statewide drinking water source protection tool. (Created by AB 592/SB 1189)
- Panel staffed by state water board and includes representatives from federal, state and local agencies with oversight of USTs and pipelines, drinking water wells, drinking water resources and UST and pipeline owners and operators.
- UC Davis researching sources and fate & transport of MTBE/other oxygenates in ground and surface water including current levels of MTBE in water, environmental and ecological effects, treatment technologies, corrosive affects of MTBE on tanks, and Lake Tahoe basin impacts (Required by SB 521)
- Marina Issues Working Group evaluating marina operations to develop recommendations to prevent, minimize and detect leaks of MTBE at marinas. (Created by Governor's executive order)
- Staffed by state water board and includes representatives from federal, state and local agencies who will assess adequacy of existing floating fuel systems, adequacy of piping systems associated with above ground storage tanks (AST) and with USTs, impacts of water craft re-fueling, and impacts of recreation use of water craft.
- UC Santa Barbara researching MTBE and other oxygenate treatment technologies to identify potential effective treatment technologies for MTBE. (Required by SB 521)
- UCLA evaluating drinking water treatment technologies to assess technology applicability to remediate ground and surface water at the source. (Required by SB 521)
- Drinking Water Research Partnership to evaluate potential cost-effective MTBE drinking water treatment technologies and to identify source protection measures that could be implemented to reduce or eliminate MTBE contamination of drinking water sources.
- Joint effort funded by Association of California Water Agencies (ACWA) and member water supply agencies and companies, WSPA and the Oxygenated Fuels Association (OFA).

- Lawrence Livermore National Laboratories are conducting MTBE soil and groundwater remediation research and biological remediation research for WSPA that includes oxygenate soil and groundwater sampling and testing protocols, groundwater plume research, in-situ bioremediation, and biological remediation technology assessment (initiated and funded by WSPA).
- WSPA developing Best Management Practices (BMP) guidelines for service stations, pipelines, and terminals to minimize product losses and environmental contamination from operation of fuel distribution facilities.

Health and Safety

- Office of Environmental Health Hazard Assessment (OEHHA) is in regulatory process to establish public health goal for MTBE as part of primary drinking water standard process (Required by AB 592/SB 1189)
- OEHHA evaluating MTBE as a possible developmental toxin, reproductive toxin, and carcinogen. (Required by AB 592/SB 1189)
- UCLA researching health and environmental effects of MTBE, including asthma and other toxic effects. (Required by SB 521)
- UC Berkeley conducting evaluation of MTBE and other oxygenate combustion by-products focusing on California CBG. (Required by SB 521)
- UC Santa Barbara conducting a risk-based analysis of the costs and benefits from use of MTBE and other oxygenates in California CBG. (Required by SB 521)
- Industry sponsored research on the freshwater aquatic toxicity of MTBE to establish a database for regulatory setting of industrial wastewater effluent limits for MTBE. Research based on USEPA approved guidelines and procedures and with USEPA review and oversight. Database to be completed by fall, 1998. (Funded by API, WSPA and OFA, with review from US EPA)

Fuel Performance and Availability

- California Energy Commission (CEC) conducting an oxygenate alternatives study to evaluate the impact on fuel supplies from refiners using various oxygenates, including an assessment of oxygenate supply and availability. California refining capacity to produce alternative fuels, and world refining capacity to produce alternative fuels. (Required by Governor's executive order)
- UC Davis researching the impact of oxygenates on vehicle performance (Required by SB 521)

Incidents/Public Activity

- Santa Monica - MTBE leaks in two well fields have shut down all the city's drinking water wells (70% of total supply) because of contamination (1996/1997).
 - Mobil (Arcadia field) provided initial payment of \$2.2M for costs the city has incurred (legal, investigative, and water costs); will also pay for cleaning up contaminated wells and any increased water purchase costs (may eventually pay up to \$6M)
 - Chevron and Shell (Charnock field) incurred first year payments of \$5M. Exxon (1%) and other companies have been asked to share the costs.
- Santa Clara - two large Santa Clara Valley Water District deep wells are shut down because of MTBE contamination. The suspected source is two nearby service stations with leaking USTs.
- Santa Clara Water District wrote to Governor Wilson to urge removal of MTBE from California gasoline. MTBE has been detected at nearly 300 leaking USTs.
- Lake Shasta, Lake Tahoe - high MTBE concentrations have been found in several California lakes near marinas.
- Oxybusters have formed a California affiliate. They are very active in meeting with legislators, testifying, and contacting media.
- Tosco wrote to CARB (October 1997) requesting "decisive action immediately" to begin moving away from MTBE, continues to make similar public statements.

- Recently announced six month "pilot" use of ethanol in 50 retail stores served by their Rodeo, CA refinery
- Chevron (December 1997) publicly acknowledged "legitimate environmental concern about MTBE," asked California regulators to "explore options for reducing or eliminating MTBE altogether"
- California radio and TV stations (especially San Francisco) provide frequent reports on MTBE developments. Print media also actively following this issue

Connecticut

Legislative/Regulatory

- Legislature requested CT Academy of Sciences to review cost effectiveness and environmental aspects of MTBE; legislative action not expected until 1999
- Legislative amendment filed requiring Department of Environmental Protection (DEP) to apply to EPA for waiver allowing sale of gasoline without MTBE (No action taken, legislature adjourned May 6, 1998)

Incidents/Public Activity

- Gasoline and Automotive Service Dealers of America wrote to DEP, Governor Rowland and many media outlets in September 1997 asking consideration of MTBE ban.
- Media attention ongoing, contrasting arguments for clean water versus clean air
- State officials have identified 20 water wells with MTBE levels above 100 ppm contamination maximum; plan increased level of monitoring
- N. J. Oxybusters actively campaigning the Governor and legislative against RFG/MTBE; local Oxybuster group formed.
- MTBE found in New Canaan water supply at 4000 times state acceptable limit.